



2811

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Shuici Kikuchi et al. Art Unit : 2811
Serial No. : 09/829,876 Examiner : Douglas W. Owens
Filed : April 10, 2001
Title : SEMICONDUCTOR DEVICE AND METHOD OF MANUFACTURING THE SAME

Commissioner for Patents
Washington, D.C. 20231

RESPONSE

In response to the action mailed August 29, 2002, please amend the application follows:

In the claims:

Please amend claims 5 to 20 as follows:

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-- 5. (Amended) A method of manufacturing a semiconductor device comprising:
implanting an impurity of a first conductive type in a semiconductor substrate of a second conductive type;
providing a first gate insulation film on the semiconductor substrate;
diffusing the implanted impurity in the substrate to form a first drain region partly under the first gate insulation film and a second drain region adjacent to and above the first drain region, said first drain region having a different impurity concentration than the second drain region;
providing a second gate insulation film on the semiconductor substrate except where the first gate insulation film is disposed;

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providing a gate electrode that spans from the first gate insulation film to the second gate insulation film;

providing a source region of the first conductive type disposed proximally to one end of said gate electrode; and

providing a third drain region of the first conductive type disposed distally from the other end of said gate electrode and disposed in said second drain region.

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6. (Amended) A method for manufacturing a semiconductor device according to Claim 5, wherein providing said first drain region and second drain region comprises diffusing said impurity from the first gate insulation film. NO support

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7. (Amended) A method of manufacturing a semiconductor device according to Claim 5, further comprising: know electrode material

providing a layer of the first conductive type to span from one end of said first gate insulation film to said third drain region. does not span from one end of the gate ins film

8. (Amended) A method of manufacturing a semiconductor device according to Claim 5, further comprising:

forming a layer of the first conductive type having a high impurity concentration at a predetermined depth in said substrate at a region spanning from a predetermined space from one end of said first gate insulation film to said third drain region, and the high impurity concentration being low at a region near surface of the substrate. 112
can't be high and low

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9. (Amended) A method of manufacturing a semiconductor device according to Claim 7, wherein phosphorus ion is implanted with an energy of about 100 KeV to 200 KeV in the substrate to form the layer. object ions? not a single ion.

10. (Amended) A method of manufacturing a semiconductor device according to Claim 8,